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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,457	01/03/2006	William S. Oakley	41793-8002.US01	8043
45965 7590 07/31/2008				
TIPS GROUP				
c/o Intellevate LLC				
P. O. BOX 52050				
Minneapolis, MN 52050				
EXAMINER				
FISCHER, MARK L				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
07/31/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,457

Applicant(s)

OAKLEY, WILLIAM S.

Examiner

MARK FISCHER

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite because it does not claim where the location of the desired track is fed back to.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hieda et al. (US Pat. No. 6,977,108 B2) in view of Nakayama et al. (US Pat. No. 6,735,046 B2).

Regarding claim 1, Hieda et al. discloses an apparatus comprising: an array of heads (Fig. 26, elements 231-233); and an electronic controller to direct emissions of the heads (Col. 4, lines 13-15 and Col. 29, lines 24-27). Hieda et al. does not explicitly disclose that heads are carbon nanotubes. However, Nakayama et al. discloses that carbon nanotubes can be used in nano-magnetic heads for inputting and outputting magnetic signals on a magnetic recording medium such as a magnetic disk (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hieda et al. with Nakayama et al. with the motivation to give a high resolution, high rigidity and high bending elasticity (Abstract) to the head thus making it more precise and durable.

Regarding claim 2, Hieda et al. discloses that the array of heads includes a read head (231) and a tracking head (232). The combination of Hieda et al. in view of Nakayama et al. discloses that the heads may be carbon nanotube as indicated in the rejection of claim 1.

Regarding claim 3, Hieda et al. discloses that the array of heads includes a read head (231) and a write head (233). The combination of Hieda et al. in view of Nakayama et al. discloses that the heads may be carbon nanotube as indicated in the rejection of claim 1.

Regarding claim 4, Hieda et al. discloses that the array of heads includes a write head (233) and a tracking head (232). The combination of Hieda et al. in view of Nakayama et al. discloses that the heads may be carbon nanotube as indicated in the rejection of claim 1.

Regarding claim 5, Hieda et al. discloses that the electronic controller controls electrons within heads (Col. 4, lines 13-15 and Col. 29, lines 24-27). The combination of Hieda et al. in view of Nakayama et al. discloses that the head may be a carbon nanotube head as indicated in the rejection of claim 6.

6. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US Pat. No. 6,738,218 B1) in view of Nakayama et al. (US Pub. No. 2003/0122073 A1).

Regarding claim 6, Hamada et al. discloses a method of operating a magnetic head with a disk having tracks, comprising: locating the magnetic head at a desired track at a rough precision (Col. 3, lines 27-29); determining an offset for a read head based on the desired track (Col. 3, lines 34-38); and tracking the track through the read head using the offset (Col. 3, lines 59-62 and Col. 4, lines 5-8). Hamada et al. does not explicitly disclose that the head is a carbon nanotube head. However, Nakayama et al. discloses that carbon nanotubes can be used as input-output probes in place of magnetic heads in magnetic disk drives (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hamada et al. with Nakayama et al. with the motivation to give a high resolution, high rigidity and high bending elasticity (Abstract) to the head thus making it more precise and durable.

Regarding claim 7, Hamada et al. discloses feeding back an indication of a location of the desired track at a fine precision (Fig. 1 indicates that the signal from position detection circuit 10 is fed back); and adjusting the offset responsive to the feeding back (Col. 3, lines 59-62 and Col. 4, lines 5-8); and adjusting a location of the magnetic head responsive to the feeding back (Col.

4, lines 5-8). The combination of Hamada et al. in view of Nakayama et al. discloses that the magnetic head may be a carbon nanotube head as indicated in the rejection of claim 6.

Regarding claim 8, Hamada et al. discloses reading from the desired track (Col. 3, lines 20-21).

Regarding claim 9, Hamada et al. discloses writing to the desired track (Col. 3, lines 19-20).

Regarding claim 10, Hamada et al. discloses receiving an indication of the desired track (i.e. target track, Col. 3, line 35).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK FISCHER whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Fischer/
Examiner, Art Unit 2627
7/28/2008